

**ANTIDEPRESSANT AZAHETEROCYCLYMETHYL DERIVATIVES OF 2,3-DIHYDRO-1,4-DIOXINO[2,3-f]QUINOXALINE**

**Background of the Invention**

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(21) This application is a continuation-in-part of co-pending application serial number 10/128,722, filed on April 23, 2002, <sup>NOW U.S. PATENT 6,617,327</sup> which claims priority from co-pending provisional application serial number 60/286,438, filed on April 26, 2001, the entire disclosure of which is hereby incorporated by reference.

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Major depression is a serious health problem affecting more than 5% of the population, with a life-time prevalence of 15-20%.

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Selective serotonin reuptake inhibitors have produced significant success in treating depression and related illnesses and have become among the most prescribed drugs. They nonetheless have a slow onset of action, often taking several weeks to produce their full therapeutic effect. Furthermore, they are effective in fewer than two-thirds of patients.

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Serotonin selective reuptake inhibitors (SSRIs) are well known for the treatment of depression and other conditions. SSRIs work by blocking the neuronal reuptake of serotonin, thereby increasing the concentration of serotonin in the synaptic space, and thus increasing the activation of postsynaptic serotonin receptors.

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However, although a single dose of an SSRI can inhibit the neuronal serotonin transporter which would be expected to increase synaptic serotonin, long-term treatment is required before clinical improvement is achieved.

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It has been suggested that the SSRIs increase the serotonin levels in the vicinity of the serotonergic cell bodies and that the excess serotonin activates somatodendritic autoreceptors, 5-HT<sub>1A</sub> receptors, causing a decrease in serotonin

# INTERNATIONAL SEARCH REPORT

International Application No PCT/EP 86/00710

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (If several classification symbols apply, indicate all) * According to International Patent Classification (IPC) or to both National Classification and IPC IPC <sup>4</sup> : A 61 K 45/06; A 61 K 37/02// (A 61 K 37/02, 31:65, 31:165); (A 61 K 37/02, 31:71)		
<b>II. FIELDS SEARCHED</b> Minimum Documentation Searched ? Classification System   Classification Symbols IPC <sup>4</sup>   A 61 K Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched *		
<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT *</b>		
Category *	Citation of Document, " with indication, where appropriate, of the relevant passages <sup>12</sup>	Relevant to Claim No. <sup>13</sup>
A	EP, A, 0132125 (ASAHI KASEI KOGYO K.K.) 23 January 1985	1-4,9-12
A	EP, A, 0148311 (ASAHI KASEI KOGYO K.K.) 17 July 1985	1-4,9-12
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* Special categories of cited documents: <sup>14</sup> - "A" document defining the general state of the art which is not considered to be of particular relevance - "E" earlier document but published on or after the international filing date - "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) - "O" document referring to an oral disclosure, use, exhibition or other means - "P" document published prior to the international filing date but later than the priority date claimed - "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention - "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step - "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. - "G" document member of the same patent family		
<b>IV. CERTIFICATION</b>		
Date of the Actual Completion of the International Search 9th April 1987 International Searching Authority EUROPEAN PATENT OFFICE		Date of Mailing of this International Search Report 19 MAY 1987 Signature of Authorized Officer M. VAN MOL 